

Serial No.: 10/665,260
Docket No.: P21-155424M/YS
NGB.286

REMARKS

An excess claim fee payment letter is submitted herewith for two (2) excess independent claims.

Applicant concurrently files herewith a petition and fee for a one (1) month extension of time.

Claims 1-9 are all the claims presently pending in the application. Claims 1-4 have been amended to more particularly define the invention. Claims 7-9 have been added to assure Applicant the degree of protection to which his invention entitles him

It is noted that the claim amendments herein or later are not made to distinguish the invention over the prior art or narrow the claims or for any statutory requirements of patentability. Further, Applicant specifically states that no amendment to any claim herein or later should be construed as a disclaimer of any interest in or right to an equivalent of any element or feature of the amended claim.

Applicant gratefully acknowledges the Examiner's indication that claims 5 and 6 are allowable and that claim 2 would be allowable if rewritten in independent form. Accordingly, Applicant has amended claim 2 to include all the limitations of the intervening claims. Notwithstanding, Applicant respectfully submits that all of the claims presently pending are allowable.

With respect to the prior art rejections, claims 1 and 3 stands rejected under 35 U.S.C. §102(b) as being anticipated by Bivens et al. (U.S. Patent No. 6,269,919). Claim 4 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Bevins et al.

These rejections are respectfully traversed in the following discussion.

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I. THE CLAIMED INVENTION

An exemplary aspect of the present invention, as recited in amended claim 1, is directed to a string type air damper including a cylinder formed in a tubular shape, defining a guide hole at one end portion thereof, a piston, which moves in the cylinder, a helical spring for biasing the piston toward the other end portion of the cylinder, and a string member guided from inside of the cylinder to outside thereof through the guide hole, wherein the piston and the string member are integrally formed, and a reinforcing plate including a material which is different than a material of the piston and string member, attached to the piston as a mount for receiving the helical spring.

By providing the reinforcing plate to the integral piston and string member, the claimed invention greatly facilitates assembly of the damper (Application at page 5, lines 1-9) and the reinforcing plate provides a surface upon which an end portion of the helical spring can be positively supported (Application at page 5, lines 17-21).

Another aspect of the invention, as recited in amended claim 3, is directed to a string type air damper including a cylinder formed in a tubular shape, defining a guide hole at one end portion thereof, a piston, which moves in the cylinder, a helical spring for biasing the piston toward the other end portion of the cylinder, and a string member guided from inside of the cylinder to outside thereof through the guide hole, wherein the piston and the string member are integrally formed, and the string member has a belt shape, the guide hole of the cylinder has a flat opening and a smooth arcuate face continuing to a wide width edge of the opening, and the string member having the belt shape is bent and guided along the arcuate face of the guide hole.

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By providing the integrally formed piston and string member with a string member having a belt shape, and a guide hole of the cylinder having a flat opening and a smooth arcuate face upon which the string member having the belt shape can be bent and guided, the claimed invention also provides a flexible string member which is stronger and able to be flexibly bent and guided. (Application at page 12, lines 20-24).

A further aspect of the present invention, as recited in claim 7, provides a method for manufacturing an integral piston and string member for a string type air damper including providing a mold for molding the integral piston and string member including a first mold for molding the piston separable from a second mold for molding a forward end portion of the string member, injecting a resin into the mold for molding the integral piston and string member, and elongating an intermediate portion of the string member by separating the first mold and the second mold while cooling the first mold and the second mold.

A string type air damper or method of manufacturing such incorporating the above features is not taught or suggested by any of the cited references, either alone or in combination.

II. THE BIVENS ET AL. REFERENCE

The Examiner alleges that the invention of claims 1 and 3 are anticipated by Bivens et al. The Examiner further alleges that claim 4 is unpatentable over Bivens et al. However, Applicant respectfully submits that the reference does not teach or suggest each and every element of the claimed invention.

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Bivens et al. discloses a plastic strand damper having a strand element that is integrally molded with the piston on one end and an attachment element on a second end (Bivens et al. at Abstract). The damper includes a coil spring wrapped around the strand element and abutting the piston and housing thereby urging the piston toward a retracted position (Bivens et al. at column 3, lines 6-10) within a cylindrical housing. The strand element reciprocatingly passes through a central aperture in the closed end of the upper housing (Bivens et al. at column 3, lines 13-15).

However, Bivens et al. does not teach or suggest that “*a reinforcing plate comprising a material which is different than a material of the piston and string member is attached to the piston to serve as a mount for receiving the helical spring*” as recited in claim 1.

The Examiner suggests that “it would have been obvious to one having ordinary skill in the art at the time of applicant’s invention to modify the reinforcing plate to be constructed of a highly resilient material.” However, there is no mention in Bivens et al. to a reinforcing plate of any type or, more pointedly, to such a plate formed of a material different than the piston, as recited in claim 1.

Bivens et al. merely discloses a “cylindrical piston 12 with circular peripheral discs 14,16 which engage the cylinder passageway 18.” (See Bivens et al. at Figure 1 and column 2, lines 41-44) These discs 14,16 are integrally formed with the piston 12 and, thus, formed of the same material as the piston 12. (See Bivens et al. at column 2, lines 65-67) There is no teaching or suggestion in Bivens et al. of a reinforcing plate formed of a material different than that of the piston, as recited in claim 1.

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Further, the function of the integral discs disclosed in Bivens et al. is completely different from the function of the reinforcing plate of the claimed invention. Indeed, the purpose of the discs in Bivens et al. is to merely guide the piston within the cylindrical housing. (See Bivens et al. at column 2, lines 41-44)

However, a purpose of the reinforcing plate of the claimed invention is to provide a mount upon which the helical spring can be positively supported. (See Application at page 5, lines 17-21) Indeed, nowhere in Bivens et al. is such a reinforcing plate taught or suggested.

Further, Bivens et al. does not teach or suggest that *“the string member has a belt shape, the guide hole of the cylinder has a flat opening and a smooth arcuate face continuing to a wide width edge of the opening, and the string member having the belt shape is bent and guided along the arcuate face of the guide hole,”* as recited in claim 3.

The Examiner baldly asserts that a string member with a belt shape and a guide hole in the end cap having a flat opening and smooth arcuate face are taught in Bivens et al.

However, there is no reference or suggestion in Bivens et al. to the shape of the strand element or the aperture. Bivens et al. merely teaches that the strand element should be an appropriate length (Bivens et al. at column 3, lines 24-29) and that the aperture should be formed to so that the longitudinal axis of the damper should pass through the aperture (Bivens et al. at column 3, lines 15-17). In fact, the only reference to shape made in Bivens et al. refers to the attachment element 26. (Bivens et al. at column 2, lines 60-65 and column 3, lines 24-29)

Bivens et al. certainly makes no reference or suggestion to the desirability to incorporate a string member having a belt shape, or any shape for that matter, to an integrally

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formed piston and string member for the purpose of providing a stronger string member. Nor does Bivens et al. teach or suggest a guide hole with a flat opening and arcuate face upon which the string member can be smoothly bent and guided.

Clearly, the string member having a belt shape, the guide hole of the cylinder having a flat opening and a smooth arcuate face continuing to a wide width edge of the opening, and the string member having the belt shape is bent and guided along the arcuate face of the guide hole, as recited in claim 3, is not taught or suggested by Bivens et al. The Examiner merely asserts that the reference teaches the features. Indeed, Bivens et al. does not teach or suggest a string member having a belt shape of the present invention.

Applicant further submits that there is no teaching or suggestion in Bivens et al. of a method of manufacturing an integral piston and string member, as recited in claim 7.

Therefore, Applicant submits that there are elements of the claimed invention that are not taught or suggested by Bivens et al. Therefore, the Examiner is respectfully requested to withdraw this rejection.

III. CONCLUSION

Pursuant to the Examiner's indication that claim 2 would be allowable if rewritten in independent form, Applicant has accordingly amended independent claim 2 to include the limitations of the intervening claims.

In view of the foregoing, Applicant submits that claims 1-9, all the claims presently pending in the application, are patentably distinct over the prior art of record and are

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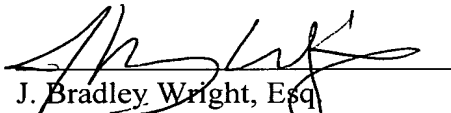
allowable, and that the application is in condition for allowance. Such action would be appreciated.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned attorney at the local telephone number listed below to discuss any other changes deemed necessary for allowance in a telephonic or personal interview.

To the extent necessary, Applicant petitions for an extension of time under 37 CFR §1.136. The Commissioner is authorized to charge any deficiency in fees, including extension of time fees, or to credit any overpayment in fees to Attorney's Deposit Account No. 50-0481.

Respectfully Submitted,

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